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FOUR NEW PLANTS OF THE GENUS DIPLOSTEPHIUM.

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Since the publication in 1928 of my second review¹ of the asteraceous genus Diplostephium, in which 43 species were recognized, four undescribed species have been found in material in the United States National Herbarium or among specimens lent for study from other herbaria. Two new species from Colombia have recently been described by Cuatrecasas,² of which one, D. mutisii, is closely allied to D. rupestre (H.B.K.) Wedd., the other, D. tolimense, a member of the group of D. ochraceum and D. floribundum.

Diplostephium vaccinioides Blake, sp. nov.

Frutex supra dense foliosus, ramis tomentulosis et densissime flavidosetosis; folia lanceolata acuta brevipetiolata integra angustissime revolutomarginata supra lucidula prope marginem tuberculato-spinulosa subtus griseo-tomentosa; capitula pro genere majuscula radiata solitaria sessilia; involucri ca. 1.3 cm. alti valde gradati phyllaria e triangulari-ovatis linearia; achenia glabra.

Shrub 30 cm. high or more, apparently erect, much branched above, the branches erect; stem (or branch) 3.5 mm. thick, denudate and cicatricose below, densely leafy in the upper half, glabrescent below; branches and branchlets obscurely tomentulose and very densely and persistently short-setose with many-celled yellowish more or less spreading hairs; internodes mostly about 1 mm. long; leaves alternate, wide-spreading; petioles about 1 mm. long, 1–1.5 mm. wide, puberulous, glabrescent, subappressed; leaf blades lanceolate, 6–12 mm. long, 2–3.5 mm. wide, acute, rather bluntly callous-pointed, at base rounded, plane or nearly so, very narrowly revolute-margined, coriaceous, above deep green, somewhat shining, tuberculate-spinulose toward margin, otherwise glabrous, beneath grayishtomentose, the costa impressed above, evident and broad beneath; heads about 2.5 cm. wide, solitary and sessile at tips of the numerous branchlets,

¹ Amer. Journ. Bot. 15: 43-64. 1928.

² Trab. Mus. Nac. Cienc. Nat. Madrid, Ser. Bot. 29: 25-28. f. 7-8. 1935.

forming a flattish-topped inflorescence 20 cm. wide; disk 1-1.2 cm. high, 8-10 mm. thick; involucre (moistened) campanulate, 13-14 mm. high. about 7 mm. thick, rounded at base, about 7-seriate, strongly graduate, the outer phyllaries triangular-ovate, acute, the middle ones lance-linear, the inner linear, scarcely widened at apex, obtuse, all firmly chartaceous, brownish-white, with thinner lacerate-ciliate tips, sparsely appressed-pilose or nearly glabrous on back, somewhat gray-tomentose toward apex; rays about 38, glabrous, the tube 1-1.5 mm. long, the lamina linear, 3-denticulate, 4-nerved, about 15 mm. long, 1-1.5 mm. wide; disk flowers numerous, their corollas sparsely puberulous with club-shaped hairs on throat and teeth, 6 mm. long (tube 1.5 mm., throat subcylindric, 3.2 mm., teeth triangular, acute, 1.3 mm. long); receptacle rounded, fimbrillate toward the center; achenes (immature) of ray and disk glabrous, 5-angled, up to 1.5 mm. long; pappus indistinctly double, dull whitish, the outer of about 8 bristles 1.5-2.5 mm. long, the inner of about 38 unequal minutely hispidulous bristles 3.5-5.8 mm. long; style branches (hermaphrodite flowers, these apparently fertile) 2.3 mm. long, the stigmatic region oblong, 0.9 mm. long, with strong stigmatic lines, the appendages narrowly triangular, acuminate, short-hispid, 1.4 mm, long.

Peru: Hacienda Runatullu, Dept. Junín, alt. 3800 m., 1909–1914, A. Weberbauer 6633 (type in Gray Herb.; photog. and fragm., U. S. Nat. Herb.).

A species of the series Lavandulifolia, allied to *D. hippophae* Blake, but at once separable by its leaves (in that species linear, 1.2–1.8 cm. long, 1–2 mm. wide). In appearance, the heads neglected, it is strikingly similar to such Andean species of *Vaccinium* as *V. floribundum* H. B. K.

Diplostephium glutinosum Blake, sp. nov.

Fruticulus, ramis glabris glutinosis apice dense foliosis; folia anguste oblanceolata vel lineari-elliptica parva integra sessilia supra mox glabrata glutinosa subtus dense ochroleuco-tomentosa margine angustissime revoluta; capitula mediocria radiata solitaria pedunculata.

Low subdichotomously branched shrub, up to 30 cm. high, the stem and branches naked, thickly covered with leaf scars, the branchlets leafy only for 1-2 cm. at the tip; leaves crowded, 6-20 mm. long, 1-4 mm. wide, obtuse, bluntly and shortly apiculate, broadest toward the apex, gradually narrowed to the sessile or subsessile base, coriaceous, plane with very narrowly revolute margin, above at first thinly tomentose, quickly glabrate and deep green, not obviously punctate, glutinous, beneath densely and compactly tomentose except on the glutinous midrib, without evident lateral veins; peduncles slender, 1.3-2.5 cm. long, naked or 1-2-bracteate, ochroleucous-tomentose, glabrescent; heads about 1.8-2 cm. wide; disk (as pressed) 7-10 mm. high, 7-13 mm. thick; involucre 5-6-seriate, graduate, 7-9 mm. high, the outermost phyllaries narrowly triangular, acute, the others linear or lance-linear, acuminate, appressed, at first rather densely ochroleucous-pilose-tomentose, later glabrescent and glandular above, purplish above and on margin, subindurate with narrow greenish 1-ribbed central area above; rays about 25 or more, white, the tube sparsely

puberulous toward apex, 2.8 mm. long, the lamina linear-elliptic, 3-denticulate, about 5-nerved, 6 mm. long, 2 mm. wide; disk flowers numerous, their corollas whitish when dried, "pink" or "deep pink" in life, puberulous toward base of throat, 5 mm. long (tube 2 mm., throat funnelform, 2 mm., teeth ovate, 1 mm. long); ray achenes narrowly obovate, compressed, densely hispidulous, 2.8 mm. long, their pappus double, the outer bristles 1 mm. long, the inner rather copious, unequal, 2–4 mm. long; disk achenes linear, 4-nerved, apparently infertile, densely hispidulous, 3 mm. long, their pappus double, the outer bristles few, 1–1.2 mm. long, the inner unequal, brownish, slightly clavellate above, up to 3.8 mm. long; style branches in the hermaphrodite flowers linear-subulate, minutely hispidulous outside, 1.2 mm. long, with minute acute terminal appendages.

COLOMBIA: Páramo de las Coloradas, above La Baja, Dept. Santander, alt. 3900–4100 m., 27 Jan. 1927, E. P. Killip & A. C. Smith 18440 (type no 1,353,854, U. S. Nat. Herb.); Páramo de Santurbán, near Vetas, Dept. Santander, alt. 3950–4160 m., 17 Jan. 1927, Killip & Smith 17487.

Related to *Diplostephium anactinotum* Wedd. and *D. parvifolium* Blake, but at once distinguished by its longer and narrower leaves and conspicuously radiate heads.

Diplostephium apiculatum Blake, sp. nov.

Fruticulus decumbens cinereo-tomentosus densissime foliosus; folia linearia vel anguste lineari-oblanceolata ca. 1.2 cm. longa 1.2 mm. lata sessilia obtuse calloso-apiculata margine revoluta ubique (supra vix dense) tomentosa; capitula solitaria mediocria radiata ramos et ramulos terminantia breviter nudo-pedunculata.

Decumbent much-branched undershrub, becoming 30 cm. long, or up to about 1 m. high; branches and branchlets densely cinereous- or rufiduloustomentose; leaves crowded, spreading or erectish, 7-18 mm. long, 1-1.5 mm. wide, acutish and tipped with an obtuse or acutish callous mucro, gradually narrowed into a petioliform base, entire, coriaceous, above thinly but persistently gravish-tomentose or in age sometimes glabrescent, beneath densely cinereous- or rufidulous-tomentose; peduncles densely tomentose. 7-15 mm, long, naked or with 1 or 2 small bracts; heads about 11-14 mm. wide; disk (as pressed) 6-8 mm. high, 8-14 mm. thick; involucre 5-6seriate, graduate, appressed, 5-6 mm. high, the outer phyllaries triangular or ovate-triangular, obtuse, the inner linear or lance-linear, acute to acuminate, all densely gray-tomentose on back, subindurate, all (except the outermost) with thinner, narrow, deep purple, nearly glabrous margin and tip; rays about 18-28, white, the tube puberulous toward apex or nearly glabrous, 2-2.5 mm. long, the lamina spreading, linear-elliptic, 3-denticulate, 2-nerved, puberulous at base below, 3.2-3.5 mm. long, 1 mm. wide; disk flowers numerous, their corollas "greenish yellow" or "greenish," 4.5-4.8 mm. long (tube glabrous, 1.8-2 mm. long, throat funnelform, puberulous with clavellate hairs, 1.5 mm. long, teeth sparsely subglandular-puberulous at apex dorsally, 1-1.3 mm. long); achenes densely glandular and sparsely hirsutulous, 1.8-2 mm. long; pappus at length rufidulous or somewhat purplish, the outer scanty, aristiform,

0.5–1 mm. long, the inner bristles thickened at apex, 4–4.5 mm. long; style branches of hermaphrodite flowere merely papillose outside, 0.5 mm. long, oblong with broadly triangular acutish appendages.

COLOMBIA: Páramo de Santurbán, en route from Tona to Mutiscua, Dept. Norte de Santander, alt. 3900 m., 19 Feb. 1927, E. P. Killip & A. C. Smith 19571 (type no. 1,354,776, U. S. Nat. Herb.); Páramo de Santurbán, near Vetas, Dept. Santander, alt. 3950–4160 m., 17 Jan. 1927, Killip & Smith 17499; Páramo Rico, near Vetas, Dept. Santander, alt. 3750–3850 m., 18 Jan. 1927, Killip & Smith 17669; Páramo de las Puentes, above La Baja, Dept. Santander, alt. 3500–3700 m., 25 Jan. 1927, Killip & Smith 18240; Páramo de las Coloradas, above La Baja, Dept. Santander, alt. 3900–4100 m., 27 Jan. 1927, Killip & Smith 18430; Páramo de Romeral, Dept. Santander, alt. 3800–4100 m., 29–30 Jan. 1927, Killip & Smith 18547.

Related to *Diplostephium lavandulifolium* H.B.K. and *D. hartwegii* Hieron., but distinguished by its definitely naked-peduncled heads, and leaves permanently pubescent above.

Diplostephium foliosissimum Blake, sp. nov.

Frutex supra densissime foliosus, ramis dense griseo- vel ochroleuco-tomentosis; folia minima ovata brevipetiolata 3 mm. longa 1.5 mm. lata obtusa supra puberula demum glabrescentia et reticulato-rugosa subtus densissime tomentosa; capitula parva radiata solitaria sessilia v. breviter pedunculata; involucri 5 mm. alti phyllaria e triangulari-ovatis linearia; achenia glandulosa et hispidula.

Shrub 1 m. high, very densely branched above; stem (or branch) 3.5 mm. thick, below denudate, cicatricose, and glabrescent; branches and branchlets densely gravish- or ochroleucous-tomentose, densely leafy, the leaves almost always with axillary fascicles; internodes 2 mm. long or less; leaves alternate; petioles puberulous above, tomentose beneath, 0.5 mm. long to almost none, about 0.6 mm, wide; blades of the principal leaves ovate or oblong-ovate, 2.5-3 mm. long, 1.2-1.5 mm. wide, obtuse or acutish, bluntly callous-tipped, rounded at base, somewhat tumid, revolutemargined, above deep green, slightly shining, at first thinly crisped-puberulous, in age glabrate or glabrescent and somewhat reticulate-rugose, beneath very densely grayish- or ochroleucous-tomentose, the costa obsolete above, entirely concealed beneath; leaves of the fascicles similar but smaller; heads about 1.4 cm. wide, sessile or on peduncles 3 mm. long or less, solitary at tips of short densely tomentose often nearly leafless branchlets mostly 2-4 mm. long, these often aggregated toward tips of branches; disk (as pressed) 6-7 mm. high and thick; involucre 5 mm. high, about 5-seriate, strongly graduate, the outermost phyllaries triangularovate, acute, the next ovate-oblong, the inner linear, acute or obtusish, all firmly chartaceous, brownish-white, rather obscurely 1-ribbed, with subscarious margin (lacerate-ciliate toward tip), the outermost subtomentose-pilose, the inner nearly or quite glabrous; rays about 17, "white," sparsely puberulous on tube and base of limb, the tube 1.5 mm, long, the lamina about 7 mm. long, 1.2 mm. wide, 3-denticulate, 4-nerved; disk flowers about 15, "yellow, later brown," sparsely puberulous on tube and

base of throat, about 5.4 mm. long (tube 1.8 mm., throat slender-funnelform, 2.4–2.8 mm., teeth narrowly triangular, acute, 1 mm. long); receptacle flattish, shallowly alveolate, the alveolae with dentate edges; achenes (immature) of ray and disk similar, sessile-glandular and sparsely hispidulous, 1.8 mm. long; pappus whitish, distinctly double, the outer of about 17 narrow paleae 1 mm. long, the inner of about 20 minutely hispidulous bristles, slightly dilated toward apex, 5 mm. long; style branches (hermaphrodite flowers) 1.9 mm. long, the stigmatic region 0.7 mm. long, the appendage subulate-acuminate, short-hispid, 1.2 mm. long.

Peru: Cordillera west of Huancabamba, Dept. Piura, Prov. Huancabamba, alt. 3200-3300 m., April 1912, A. Weberbauer 6044 (type in Gray

Herb.; photog. and fragm., U. S. Nat. Herb.).

A member of the series Lavandulifolia, allied to $D.\ antisanense$ Hieron., which has linear or elliptic-linear leaves 5–8 mm. long, 0.8–2 mm. wide, without axillary fascicles.